



# Report of Surficial Removal and Burial Location Actions

North Ridge Estates  
Klamath Falls, Oregon

prepared by:  
PBS Engineering and Environmental

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**Report of Surficial Removal and Burial Location Actions  
North Ridge Estates  
Klamath Falls, Oregon**

AOC Tasks 1A, 4A and 8A

January 2004

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# **SURFICIAL REMOVAL AND BURIAL LOCATION ACTIONS**

## **NORTH RIDGE ESTATES, KLAMATH FALLS, OREGON**

### **1. INTRODUCTION**

This report describes completed work to remove asbestos-containing material (“ACM”) construction debris from the North Ridge Estates subdivision (see Figures 1 and 2, Tab 1) pursuant to Tasks 1A through 4A and Tasks 8A, 11A and 12A of the Statement of Work (“SOW”) approved by the U.S. EPA and made a part of the Administrative Order on Consent for Removal Action and Streamlined Risk Assessment effective May 23, 2003 (the “AOC”). PBS Engineering and Environmental (PBS) managed the work and has prepared this report as the Project Coordinator for the Respondents under the AOC. The work was performed under oversight by U.S. EPA Region 10 staff, including their On-Scene Coordinator (OSC), who were onsite for the duration of the work.

North Ridge Estates (the “Site”) is located approximately three miles north of the City of Klamath Falls, Oregon at an elevation of 4,500 feet. The Site is a portion of a 422-acre residential subdivision developed along both sides of Old Fort Road and North Ridge Drive (Figure 2). The Site was originally developed by the United States as the Klamath Falls Marine Recuperational Barracks. The Site was subsequently owned and operated by the State of Oregon as the Oregon Technical Institute. (For a more detailed history of the Site, refer to the *Preliminary Assessment Report* (PBS, June 2003.)

Buildings and other infrastructure at the Site, including buried steam lines, contained asbestos or were constructed with ACM. Apparently as the result of historic salvage and demolition and other activities associated with these buildings and infrastructure, ACM Debris, consisting primarily of a siding material known as transite or cement-asbestos board, became scattered around the Site. ACM debris was also suspected to have been concentrated in mounds (hereinafter, “burial piles”) at the Site. Finally, buried steam lines that are presumed to contain asbestos insulation inside steel culvert pipe were thought to have been abandoned in place at the Site but were not reliably mapped or located.

Accordingly, the tasks noted above were developed and performed. This report describes: (1) the completion of removal of surficial ACM debris (including “hot spots”) focusing on the occupied parcels at the Site; (2) completion of the investigation of identified suspect burial piles on the occupied parcels at the Site; (3) and the mapping of buried steam line locations at the Site. Representative photographs are provided in Appendix A; Table 1 summarizes all findings and is in Tab 1.

### **2. SURFICIAL REMOVAL**

#### **2.1 Background**

The Surficial Removal encompassed the following AOC tasks: Task 1A – Surficial Removal Work Plan, Task 2A – Hazardous and Contaminated Substance Health

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and Safety Plan, and Task 3A – Conduct the Removal Action. Work products for the first tasks were approved by the EPA on June 6, 2003. Details of the objectives,

specific work methods and health and safety procedures may be found in those documents (see Section 6, References).

### **2.2 Surface Removal - Action (1) Surface Pickup**

The surface pickup of ACM debris was defined as the removal by hand of asbestos-containing material (ACM) debris, including pieces of cement-asbestos board (CAB) or transite, roofing material, vinyl floor tile and mastic and pipe insulation. The SOW limited ACM debris removal to ACM debris of a size approximately 1-inch or greater in largest dimension, visible and accessible to hand-pickup at the ground surface. As the work progressed, the concentration of ACM debris in some areas was such that hand pick-up was not practical. These areas were identified as “hot spots” and the boundaries of the areas were flagged for later removal using heavy equipment (see Table 1 in Tab 1, and Section 2.4, below).

Prior to the start of work, a notification of the proposed asbestos abatement work was submitted to the OSC and copied to the Oregon DEQ (see Appendix B).

Prior to entry onto private property, a signed access agreement was obtained from the property owner (see Appendix C). Email notification was provided to all property owners in advance of the work.

The contractor team consisted of an Abatement Supervisor and several Abatement Full-Scale Workers. The team crossed each parcel in equidistant spacing moving parallel to parcel boundaries; marking the width of each pass with flagging or other means to ensure that subsequent passes thoroughly covered the parcel. The team picked up visually identifiable ACM debris, which was then double-bagged, labeled, weighed and stored in a locked trailer.

The 22 residential developed parcels were the focus of the surface removal action. Upon completion of the removal work, survey work continued outward from these locations to determine the outlying limits of surficial ACM debris.

Upon completion of work on each parcel, the OSC signed a form verifying satisfactory completion of the surficial debris removal on that parcel. The OSC has approved the removal work performed on each parcel with one exception. At the Bailey parcel, it was agreed that MBK representatives would work with the property owner to stabilize ACM buried in the hillside behind the house.

### **2.3 Surface Pickup Findings**

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## **SURFICIAL REMOVAL AND BURIAL LOCATION ACTIONS NORTH RIDGE ESTATES, KLAMATH FALLS, OREGON**

Work commenced onsite on June 9, 2003, and continued without significant interruption through October 17, 2003. Rose City Contracting, Portland, Oregon, was selected as the asbestos abatement contractor to complete the removal under the oversight of PBS and EPA representatives. The size of the contractor's crew fluctuated from three to 15 members over the course of the work.

The pickup occurred on unoccupied, MBK-owned parcels only until sufficient access agreements could be obtained to start work on the 22 developed residential parcels. Otherwise, MBK-owned parcels and other unoccupied parcels were not included in the work.

The majority of ACM debris appeared to be small pieces of cement-asbestos board (transite), with lesser amounts of roofing and rarely floor tile and small pieces of air-cell insulation.

### **2.4 Surface Removal - Action (2) "Hot Spot" Removal**

Nine "hot spots" were identified by the OSC for further action (Table 1 and Figure 3, Tab 1). Certain of the hot spots were removed by hand by the abatement contractor. Other hot spots were removed using backhoe equipment in two separate actions, by Tomahawk Abatement (Klamath Falls) in July 2003 and by RMCAT Environmental (Portland) in October 2003. Work procedures included spray-misting of the backhoe and debris/soil in transport; loading into a plastic-lined drop-box and sealing the load; and immediate transport to the nearby Klamath County Landfill. The trailer of surface debris bags was also delivered to the landfill for disposal. See Appendix E for disposal receipts.

PBS completed an area-wide sampling of surface soils prior to the surface pickup of debris, using protocols developed under AOC Task 6A. In addition, most of the hot spots were sampled by PBS as noted in Table 1 prior to removal of the concentrated debris, again per methods outlined in Task 6A.

### **2.5 Hot Spot Removal Findings**

**Walle – 3428 North Ridge Drive.** An area of concentrated debris was located near the concrete foundation. This area was picked-up by hand. Including debris removed from elsewhere on the parcel, a total of 67 bags of ACM weighing 1,514 pounds were removed.

**Selim – 3434 North Ridge Drive.** An extensive area of roofing sheets was removed from the east side of the parcel near North Ridge Drive. The material was exposed at the surface in places, elsewhere covered by several inches of decayed vegetation, fir needles, etc. The roofing was approximately 6 to 8 inches thick. A total of 41,200 pounds of ACM was removed from these hot spots. The areas were restored to-grade with clean soil.

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**Bailey – 3440 North Ridge Drive.** Concentrated debris was found in the hillside west of the house. Material was removed from this location to the extent feasible without endangering an overhanging tree. Two smaller piles were removed from areas along the north property line. A total of 79,040 pounds of material was removed from these hot spots.

**Lee – 3502 North Ridge Drive.** ACM debris including roofing was found mixed with gypsum wallboard debris on the concrete foundation west of the house. A total of 500 pounds of ACM was removed by hand from this area.

**Orlando – 3515 North Ridge Drive.** An area approximately 8 feet in diameter was located in the back yard east of the house. This material was picked-up by hand. Including other ACM picked-up from the Orlando parcel, this material totaled 21 bags and 416 pounds.

**Cornachione – 3930 Old Fort Road.** A small area of concentrated debris was thought to be located on the northwest corner of the parcel, and later determined to be located on the adjoining MBK-owned parcel. No action was taken.

**Micka – 3533 North Ridge Drive.** A debris pile located east of the residence was removed using a backhoe and the area restored with clean fill. A total of 32,660 pounds of material was removed from this area.

**Mingus – 3547 North Ridge Drive.** An approximately 8-foot diameter area of concentrated ACM debris was located near the northeast corner of the detached garage. This material was picked-up by hand. Including material picked-up from elsewhere on the parcel, a total of 17 bags weighing 326 pounds were removed.

**Sarsenski – 3451 Old Fort Road.** An area of weathered cement-asbestos board was found on the hillside south of the house, facing Old Fort Road. Included with other material picked-up on the parcel, 47 bags weighing 1,288 pounds were removed.

## **2.5 Surficial Removal Summary**

Following procedures outlined in the Work Plan, the Surficial Removal Action was completed, resulting in the removal of over 7 tons of material picked up by hand and over 76 tons of material removed from hot spots (piles of concentrated ACM).

The following table provides a summary of the number of bags and weights removed from each residential parcel.

Table 2 Weight of ACM Removed by Parcel

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<b>OWNER NAME</b>	<b>Surface Pickup: # of Bags/Weight</b>	<b>Hot Spot Weight Removed</b>	
Burns	20 - 355	--	
Stearns	5 - 65	--	
Gibson	28 - 772	--	
Lee	57 - 1,265	500	
Gurske	1 - 13	--	
Cornachione	53 - 1,098	--	
Peterson	14 - 362	--	
Walle	67 - 1,514	--	
Bailey	111 - 2,535	79,040	
Dykstra	41 - 1,176	--	
Wenneis	1 - 30	--	
MBK (TL 38 09 15A 1700)	2 - 53	--	
Metz	1 - 4	--	
Homfeldt	8 - 122	--	
Graham	3 - 67	--	
Devish	15 - 284	--	
Winn	13 - 159	--	
Hawthorne	1 - 10	--	
Selim	45 - 968	41,200	
Villa	16 - 385	--	
Orlando	21 - 416	Hand pickup; incl. at left	
MBK (TL 38 09 15A 0304)	19 - 397	--	
Mingus	17 - 326	Hand pickup; incl. at left	
MBK (TL 38 09 15D 3000)	10 - 204	--	
Micka	29 - 516	32,660	
West	1 - 20	--	
Sligar	2 - 27	--	
Sarsenski	47 - 1,288	Hand pickup; incl. at left	
Total Weight:	14,431 lbs. 7.22 tons	153,400 lbs. 76.70 tons	<b>TOTAL: 83.92 tons</b>

Approximately 0.5 tons or more of ACM debris was removed by hand from each of the Walle, Selim, Bailey, Lee, Dykstra and Cornachione parcels, all clustered in the north 1/3 of the site. An additional 27 to 66 tons were removed from concentrated ACM piles at the Micka, Selim and Bailey parcels. The high volume of surficial ACM removed from the Bailey parcel may be a result of the significant landscaping and exterior improvements by the homeowner, exposing and distributing ACM about the parcel.

The OSC gave written Certification of Completion of work on the designated parcels with the exception of the Bailey property. At this parcel, it was agreed that MBK representatives would work with the property owner to stabilize ACM buried in the hillside behind the house.

### **3. BURIAL PILE EXPLORATION**

#### **3.1 Background**

As described in the AOC Task 11A, the Burial Pile Action was intended to address the need for stabilizing, consolidating or otherwise securing the five locations at the site that have historically been identified by the DEQ and others as “burial piles”. The “burial piles” have been suspected to be the locations of large amounts of ACM debris. The task also included evaluating any additional burial pile locations identified in the project area. The work plan to conduct these tasks was approved by the EPA on July 2, 2003.

#### **3.2 Burial Pile Exploration – Action (3)**

At the commencement of work at the Site, there were a number of known and suspected burial pile locations compiled by Oregon DEQ and others. “Burial pile” had apparently been loosely defined as a mound or unnatural surface feature that exhibited ACM exposed at the surface and was suspected to contain concentrated ACM. Prior to this work, there had been no evaluation of the suspect piles to determine if large quantities of ACM were indeed “buried” within the piles, or if the piles were a result of site clearing and leveling prior to construction.

As site work progressed over the summer and knowledge of site conditions increased, the list of suspect burial piles was amended and a total of 13 locations were agreed-upon for further assessment (see Table 1).

RMCAT Environmental (RMCAT) was the asbestos abatement contractor selected to perform the work, under the oversight of PBS and EPA representatives. Signed access agreements were already in-place for each of the designated properties. Email notification was provided to all property owners in advance of the work.

Test pits were completed across each pile to characterize the contents of the pile, using a small backhoe bucket. If high concentrations of ACM debris were encountered, the ACM was loaded via backhoe into a lined dumpster and transported immediately to the Klamath County Landfill (receipts in Appendix E). Otherwise, removed soil was returned to the pit and compacted with the backhoe bucket.

A public utility locate was requested. Field work commenced on October 21 and was completed on October 23, 2003.

The approximate numbers and locations of test pits are shown in Figure 4. Shaded areas reflect the approximate size of the disturbed soil, however in most cases the full lateral and vertical extent of the burial piles has not been determined. Hatched

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lines on the Selim and Peterson parcels indicate one approximate boundary of the pile based on current work; again, the full extent is unknown.

As necessary, the areas of the test pits were backfilled to the original grade with clean fill obtained from offsite (outside of North Ridge Estates properties) and compacted with the backhoe bucket. No surface sod or landscaped areas were impacted.

### **3.3 Burial Pile Exploration Findings**

At the Rinehart parcel, a former marine barracks structure known as the Swimming Pool remains onsite, consisting of a high retaining wall behind which soil and possibly construction wastes have been filled. Three voids existed atop the pile that were deemed a safety hazard. The contractor pushed soil from the hillside to the west into these voids and compacted the soil with the backhoe bucket.

A low broad mound exists on the southwest corner of the Cornachione parcel. Historical information indicates that this area was a former barracks building crawlspace, a low area that became a disposal area following demolition of the building. Reportedly, plastic-wrapped insulated steam piping was buried underneath concrete and other construction debris, at the direction of the EPA in the 1970s. Based on this information, it was agreed that this area did not require exploration.

A cave-in or void present on the Peterson parcel, southwest corner, was filled with soil from the surrounding area and compacted with the backhoe bucket. This area was also explored via several test pits. A large buried concrete slab was encountered, and large sheets of buried sheet metal. No ACM debris was removed.

Near the north property line of the Selim parcel, significant amounts of CAB debris was observed. A total of 3,720 pounds of test pit material was loaded as asbestos-containing and the pit backfilled with clean soil.

The low mound at the downhill (east) side of the Villa parcel contained significant amounts of CAB debris. A test pit completed outside of the mound boundary contained no observable asbestos debris, but contained pieces of concrete slab. A total of 930 pounds of debris was removed during test pit exploration.

At the Mingus/West burial pile, extensive CAB was encountered and a concrete slab lying 3 feet below surface. Floor tile with black mastic was observed on the surface of the concrete slab. Other test pits in this pile encountered limited CAB debris and extensive construction debris such as wood, painted concrete, gypsum wallboard. ACM debris totaling 3,720 pounds was removed from test pits.

Test pits completed on the Wenneis parcel contained no significant CAB and no material was loaded offsite from this work.

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CAB was observed in most test pits completed on the Devish property, in a mound constructed between the house and Old Fort Road. A total of 930 pounds of ACM debris was removed from the test pits.

The Gibson property burial pile on the north side of the parcel was found to contain CAB debris in most pits. A total of 1,860 pounds of ACM debris was removed.

Test pits completed on the MBK-owned parcel referred to as the Parade Grounds contained no significant CAB or other asbestos-containing material.

### **3.4 Burial Pile Exploration Summary**

Following procedures outlined in the Work Plan, the Burial Pile Exploration was completed. A total of 5.58 tons of ACM debris generated by test pit exploration was removed and disposed offsite. A total of 8 burial piles were identified, at the following occupied parcels (homeowner name): Rinehart, Cornachione, Selim, Bailey, Villa, Mingus/West, Gibson and Devish, .

## **4.0 BURIED STEAMLINER EXPLORATION**

### **4.1 Background**

This effort included work described in Task 8A of the AOC, to conduct a Geophysical Survey to assess the extent of buried steam lines. The work plan to conduct this task was approved by the EPA on July 2, 2003.

The buried steam lines consist of metal piping approximately 4 inches in diameter that is wrapped in about two inches of a woolly asbestos-containing insulation which is in turned wrapped with an asbestos-containing black felt paper and covered with metal corrugated piping that is 8, 10 or 12 inches in diameter.

### **4.2 Buried Steam Lines Exploration – Action (4)**

The estimated locations of the buried steamlines were compiled onto a base map for use in the field, using the layout of the former marine barracks and historic lists of steamline locations (see Table 1). A public utility locate was requested, and historic underground utility maps for the barracks were obtained from the City of Klamath Falls.

A geophysical surveyor, GeoPotential Inc, performed the field survey using surface geophysical equipment. In addition, a total of 10 test pits were performed to verify that lines detected by geophysical equipment were the buried steamlines. Tomahawk Abatement performed the test pits.

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Geophysical equipment was connected to known pipe locations, such as a pipe stub exposed at a concrete slab, allowing that line to be traced to the end of reliable equipment response, or to an obstacle such as a house. In such an event, the survey scanned the perimeter of the house to determine if the steam line extends underneath the house.

### **4.3 Buried Steam Lines Exploration Findings**

The field work was conducted on July 8 through 10, 2003; and July 22 through 25, 2003. Equipment found to be most effective was a high-sensitivity metal detector. Ground-penetrating radar was hindered by heterogeneous soil conditions. The geophysical survey report is in Appendix F.

Locations of detected steamlines were measured using GPS equipment. The locations are presented in Figure 5, as well as the locations of test pits. Care was taken to not impact the steamline during excavation. The lines were found to be buried at 2 to 3 feet below ground surface. Test pits were backfilled with the removed soil and compacted with the backhoe bucket.

Mapped steamlines appear to follow the layout of the former marine barracks buildings. Lines were found to remain in-place along the north side of Thicket Court to the east; several barracks-era houses remain in-place at the east end of Thicket Court.

A short section of steamline was traced by a local utility locator (Locates Downunder) out the west side of the Sligar Apartments, off the north end of North Ridge Estates. A short section of insulated piping was found exposed in the basement of the apartments; the locator was able to charge the pipe and trace a short distance west of the building. The apartment building is also barracks-era construction.

### **4.4 Buried Steam Lines Exploration Summary**

Following procedures outlined in the Work Plan, the Buried Steamline Exploration was completed and findings compiled onto a site map (Figure 5).

## **5. CONCLUSIONS**

This report documents (1) the completion of removal of surficial ACM debris (including “hot spots”) from occupied parcels at the Site; (2) completion of the investigation of identified suspect burial piles on the occupied parcels at the Site; and (3) the mapping of all buried steam line locations at the Site.

**Surface Pickup and Hot Spot Removal.** Hand pick-up of ACM surface debris and removal of concentrated surface hot spots was successfully completed at all occupied parcels at the Site. A total of 83.92 tons of ACM debris was removed and disposed offsite.

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**Burial Pile Investigation.** All previously and newly identified suspect burial piles were investigated by the completion of test pits. Any ACM disturbed by that activity was removed and disposed offsite (total of 5.58 tons). As necessary, pits were restored to-grade with clean fill.

Some of the suspected piles were found to contain concentrated ACM debris. Other piles contained mostly other types of construction debris, such as concrete blocks, wood and gypsum wallboard. The location of the piles and variable content of the piles suggests that the piles were created during site clearing activities that involved pushing waste materials (old building demolition debris as well as soil and rock) out-of-the-way for new construction; into piles without regard to asbestos.

The piles appear to have been created over a long period of time, such that a certain amount of cover has naturally settled atop the piles (vegetation, soil movement). Some piles were created more recently by recent construction and homeowner landscaping activities, and appear to have less natural vegetative cover.

As a result of pre-existing structures that facilitated ACM burial in decades past, ACM debris is likely to have been intentionally “buried” in the former “swimming pool” structure on the Rinehart parcel, and in the former crawlspace depression that existed on the southwest corner of the Cornachione parcel.

Otherwise, there does not appear to have been an attempt to “bury” ACM. Although the volume of investigated piles was not determined, it is considered reasonable to conclude that the bottom surface of each pile lies at the level of the former natural topography.

**Buried Steam Lines Exploration.** Using geophysical survey equipment, underground utility lines that may be insulated with ACM were located. Such locations appeared to correspond to the layout of historic marine buildings and likely routes for such utilities. A certain amount of steam line appears to no longer be in-place, assuming that supply-and-return lines traveled to and from every historic building. The findings of the geophysical survey illustrated in Figure 5 suggest that much of the historic steam lines may remain in-place.

The insulation wrapping on the steam lines reportedly contained a type of asbestos (“amosite”) that is apparently unique to the steam lines in application (“aircell”). Based on the somewhat rare occurrence of visually-identifiable aircell insulation in the course of the surface pickup, hot spot removal and burial pile exploration, and the rare occurrence of amosite fibers in preliminary sampling to-date, it is believed that the pipe insulation that was removed from the ground during early site demolition was either: (1) wrapped and buried on the Cornachione parcel; or, (2) removed from the site during early salvage operations.

## **6.0 REFERENCES**

*Preliminary Assessment Report, North Ridge Estates, PBS Engineering and Environmental, June 2003.*

*Hazardous and Contaminated Substance Health and Safety Plan, PBS Engineering and Environmental, June 2003.*

*Surficial Removal Work Plan, North Ridge Estates, PBS Engineering and Environmental, June 2003.*

*Burial Pile and Buried Steam Line Work Plan, North Ridge Estates, PBS Engineering and Environmental, July 2003.*

**TAB 1**  
**TABLES AND FIGURES**

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**SURFICIAL REMOVAL AND BURIAL LOCATION ACTIONS  
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**Table 1. Summary of Findings**

OWNER NAME ADDRESS TAX LOT ID	HISTORIC NOTES	ACTIONS 2003				RECOMMENDATIONS
		Surficial Pickup	Hot Spot	ACM Burial Pile	Underground Steam Lines ID'd	
Rinehart (no address) 15D 1400	Debris burial in former swimming pool on southwest	None; unoccupied.	None	Clean soil pushed into three cave-in areas atop retaining wall; fill is assumed to contain ACM, construction debris, soil.	Steam line verified.	Maintain integrity of fill behind retaining wall.
Cornachione 3930 Old Fort Rd. 15D 0500	Debris burial pit on northeast side of Lot 6; anecdotes report burial of plastic-wrapped steam lines covered with concrete demo waste, into an existing depression (former bldg. crawlspace).	53 bags; 1,098 lbs. removed.	None	Low broad uneven mound on SW corner of parcel; no test pits performed.	Steam line verified.	Maintain integrity of mound in southwest corner.
Walle 3428 North Ridge Dr. 15B 0200	Two concrete foundations on Lot 12	67 bags; 1,514 lbs. removed.	Yes- ACM debris near concrete foundation sampled & removed by hand.	None; No evidence of concentrated ACM in the vicinity of foundation.	Steam line verified.	None.

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OWNER NAME ADDRESS TAX LOT ID	HISTORIC NOTES	ACTIONS 2003				RECOMMENDATIONS
		Surficial Pickup	Hot Spot	ACM Burial Pile	Underground Steam Lines ID'd	
Selim 3434 North Ridge Dr. 15B 0400	Debris burial pit on north side of Lot 13	45 bags; 968 lbs. removed.	Yes-roofing debris sampled and removed; 41,200 lbs. Removed.	Test pits completed; concentrated CAB debris on N. prop. Line; 3,720 lbs. Removed.	Steam line verified.	Maintain integrity of pile near north property line and near house.
Bailey 3440 North Ridge Dr. 15B 0500	2 concrete foundations on Lot 14	111 bags; 2,535 lbs. removed.	Yes-Sampled & removed; 79,040 lbs.	Concentrated ACM (CAB) in hillside back of house; removed to extent feasible.	Steam line verified.	Maintain integrity of debris in hillside west of house.
Lee 3502 North Ridge Dr. 15C 0200	Debris burn pit and 1 concrete foundation on Lot 16; 2 steam pipes (24 inches below ground surface) on northeast side on lot, parallel to North Ridge Road	57 bags; 1,265 lbs. removed.	Yes-500 lbs. removed.	ACM debris cleaned off concrete slab; no other piles ID'd.	Steam line verified.	None
Villa 3508 North Ridge Dr. 15C 0300	Debris burial pit on east side of Lot 17; 2 steam pipes (24 inches below ground surface) on northeast side of lot, parallel to North Ridge Road	16 bags; 385 lbs. removed.	None	CAB and concrete debris found in mound at downhill (NE) side of parcel; test pits, 930 lbs. removed.	Steam line verified.	

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OWNER NAME ADDRESS TAX LOT ID	HISTORIC NOTES	ACTIONS 2003				RECOMMENDATIONS
		Surficial Pickup	Hot Spot	ACM Burial Pile	Underground Steam Lines ID'd	
Winn 3514 North Ridge Dr. 15C 0400	2 steam pipes (24 inches below ground surface) on northeast side of Lot 18, parallel to North Ridge Road	13 bags; 159 lbs. removed.	None	None ID'd.	Steam line verified.	None
Homfeldt 3637 Hunters Ridge Rd. 15A 1800	Former steam boiler plant located in center of Lot 10, steam main lines (18-inch diameter) and other 10-inch and 8-inch diameter pipes possible on lot	8 bags; 122 lbs. removed.	None	None ID'd.	Steam line verified.	None
MBK (NO ADDRESS) 15A 1700	Concrete foundations on Lot 9, possible steam pipes on northeast side of lot	2 bags; 53 lbs. removed.	None; suspect material was non-ACM building debris.	None ID'd; "Parade grounds"; test pits completed in suspect pile areas, no significant ACM noted.	Steam lines verified.	None
Dykstra 3530 Hunters Ridge Rd. 15C 0100	Steam pipes cross center of Lot 8, northeast to southwest; 18-inch, 10-inch and 8-inch diameter pipes	41 bags; 1,176 lbs. removed.	None	None ID'd.	Steam line verified.	None
MBK (no address) 15D 3000	Debris burial pit on southwest side of Lot 6; steam pipe (8-inch diameter) along northwest side and across center of lot.	10 bags; 204 lbs. removed.	None	Explored debris pile in NE corner. No material removed.	Verified steam line.	None

**SURFICIAL REMOVAL AND BURIAL LOCATION ACTIONS  
NORTH RIDGE ESTATES, KLAMATH FALLS, OREGON**

OWNER NAME ADDRESS TAX LOT ID	HISTORIC NOTES	ACTIONS 2003				RECOMMENDATIONS
		Surficial Pickup	Hot Spot	ACM Burial Pile	Underground Steam Lines ID'd	
MBK (no address) 15D 3100	Steam pipe (probably 8-inch diameter) across center of Lot 5	None – unoccupied.	None	None ID'd.	Verified steam line.	None
MBK (no address) 15D 3200	Steam pipe (probably 8-inch diameter) across center of Lot 4	None – unoccupied.	None	None ID'd.	Verified steam line.	None
MBK (no address) 15D 3600	(none)	None – unoccupied.	None	None ID'd.	Steam line verified.	None
MBK (no address) 15C 0500	(none)	None – unoccupied.	None	None ID'd.	Steam line verified.	None
Micka 3533 North Ridge Dr. 15D 3300	Steam pipe (probably 8-inch diameter) across center of Lot 3	29 bags; 516 lbs. Removed.	Yes-removed 32,660 lbs.	None ID'd.	Verified steam line.	None
Graham 3537 North Ridge Dr. 15D 3400	Debris burial pit on northeast side of Lot 2; steam pipe (probably 8-inch diameter) across northeast side of lot	3 bags; 67 lbs. removed.	None	No; No evidence of concentrated ACM in test pits.	Verified steam line.	None.

**SURFICIAL REMOVAL AND BURIAL LOCATION ACTIONS  
NORTH RIDGE ESTATES, KLAMATH FALLS, OREGON**

OWNER NAME ADDRESS TAX LOT ID	HISTORIC NOTES	ACTIONS 2003				RECOMMENDATIONS
		Surficial Pickup	Hot Spot	ACM Burial Pile	Underground Steam Lines ID'd	
Mingus 3547 North Ridge Dr. 15D 3500	Debris burial pit on north center of Lot 1	17 bags; 326 lbs. removed.	Yes-Sampled & removed (included in preceding weight)	Debris pile at Mingus/West property lines; concrete debris with floor tile and mastic affixed; CAB and general construction debris; test pits removed 1,860 lbs.	Verified steam line.	Maintain integrity of pile at east property line.
West 3442 Old Fort Rd. 15D 0900	(none)	1 bag; 20 lbs. removed.	None	Debris pile at Mingus/West property lines; concrete debris with floor tile and mastic affixed; CAB and general construction debris; test pits removed 1860 lbs..	Verified steam line.	Maintain integrity of pile at west property line.
Orlando 3515 North Ridge Dr. 15D 2900	(none)	21 bags; 416 lbs. removed.	Yes-sampled and removed (weight included in preceding column).	None ID'd.	Verified steam line.	None

**SURFICIAL REMOVAL AND BURIAL LOCATION ACTIONS  
NORTH RIDGE ESTATES, KLAMATH FALLS, OREGON**

OWNER NAME ADDRESS TAX LOT ID	HISTORIC NOTES	ACTIONS 2003				RECOMMENDATIONS
		Surficial Pickup	Hot Spot	ACM Burial Pile	Underground Steam Lines ID'd	
Sarsenski 3451 Old Fort Rd. 15D 1000	(none)	47 bags; 1,288 lbs. removed.	Yes-sampled and removed (weight incl. in preceding column).	None ID'd.	Outside of geophysical survey area; no suspected steam lines based on location.	None
Sligar 4343 Old Fort Rd. 15A 0307	(none)	2 bags; 27 lbs. removed.	None	None ID'd.	Verified steam line.	None
Burns 3808 Old Fort Rd. 15D 0600	(none)	20 bags; 355 lbs. removed.	None	None ID'd.	Verified steam line.	None
Stearns 3601 North Ridge Dr. 15D 1200	(none)	5 bags; 65 lbs. removed.	None	None ID'd.	Verified steam line.	None
Gurske 3636 North Ridge Dr. 15D 1400	(none)	1 bag; 13 lbs. removed.	None	None ID'd.	No steam lines identified.	None
Devish 3580 Old Fort Rd. 15D 0800	(none)	15 bags; 284 lbs. removed.	None	Mound between house and Old Fort Rd, CAB found in most test pits; 930 lbs. Removed.	Verified steam line.	Maintain integrity of pile between house and Old Fort Road.

**SURFICIAL REMOVAL AND BURIAL LOCATION ACTIONS  
NORTH RIDGE ESTATES, KLAMATH FALLS, OREGON**

OWNER NAME ADDRESS TAX LOT ID	HISTORIC NOTES	ACTIONS 2003				RECOMMENDATIONS
		Surficial Pickup	Hot Spot	ACM Burial Pile	Underground Steam Lines ID'd	
Metz 2720 Old Fort Rd. 15D 1600	(none)	1 bag; 4 lbs. removed.	None	None ID'd.	No steam lines identified.	None
Wenneis 3721 Scott Valley Dr. 15D 2500	(none)	1 bag; 30 lbs. removed.	None	None; no significant ACM found in test pits.	Outside of geophysical survey area; none suspected based on location.	None
Gibson 3668 Old Fort Rd. 15D 0700	(none)	28 bags; 772 lbs. removed.	None	Pile on N. side, CAB found in most test pits; 1,860 lbs. Removed.	Verified steam line.	Maintain integrity of pile on north side of property.
Peterson 3433 North Ridge Dr. 15B 0600	(none)	14 bags; 362 lbs. removed.	None	No; void in SW corner filled with soil, test pits found construction debris, no ACM removed.	No steam lines identified.	None.
MBK (no address) 15A 0304	(none)	19 bags; 397 lbs. removed.	None	None ID'd.	No steam lines identified.	None
Hawthorne 2840 Old Fort Rd. 15D 1500	(none)	1 bag; 10 lbs. removed.	None	None ID'd.	No steam lines identified.	None

**SURFICIAL REMOVAL AND BURIAL LOCATION ACTIONS  
NORTH RIDGE ESTATES, KLAMATH FALLS, OREGON**

OWNER NAME ADDRESS TAX LOT ID	HISTORIC NOTES	ACTIONS 2003				RECOMMENDATIONS
		Surficial Pickup	Hot Spot	ACM Burial Pile	Underground Steam Lines ID'd	
Bunch (no address) 15D 3900	none)	None (unoccupied)	None	None ID'd.	No steam lines identified.	None.
Holland (no address) 15D 3800	(none)	None (unoccupied)	None	None ID'd.	No steam lines identified.	None